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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,904	11/26/2003	William Lorenz	H0004534-1140	1129

7590

06/15/2005

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EXAMINER

CASAREGOLA, LOUIS J

ART UNIT

PAPER NUMBER

3746

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/723,904

Applicant(s)

LORENZ, WILLIAM

Examiner

Louis J. Casaregola

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9-12 is/are rejected.
- 7) ☒ Claim(s) 4-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Claim Rejections - 35 USC 103***

Claims 1, 2, and 9-12 are rejected under 35 USC 103(a) as being unpatentable over any of Riple, Nelson, or Herbison et al in view of either Linebrink et al or Jansen.

Each of the primary references discloses a gas turbine fuel system comprising a boost pump followed by a positive displacement metering pump driven by a variable speed electric motor; see elements 12, 14, and 32 of Riple; elements 12, 14, and 16 of Nelson; and elements 24, 30, and 32 of Herbison. Riple further describes his positive displacement metering pump 14 as "a gear pump, vane pump, or other positive displacement pump" (col. 3, lines 7-10), while Nelson and Herbison are silent as to the details of their positive displacement pumps. Though not specifically shown in the primary references, piston pumps are a well known type of positive displacement pump, and they have recognized utility as gas turbine fuel metering pumps as suggested by the secondary references; see for example element 120 in Figure 2 of Linebrink, and element 12 along with paragraph 0012 of Jansen. It would have thus been obvious to use a piston pump as the "other positive displacement pump" suggested by Riple, and/or as a suitable choice for the generic positive displacement pumps disclosed by Nelson and Herbison. The resulting combinations would read on the present claims.

The claimed piston pump is further described as pumping a constant amount per revolution such that flow is controlled by speed (claim 2), and pumping the same volume of fuel independently of output pressure (claim 10). Such characteristics, however,

would appear to be true for positive displacement pumps in general, including those in the cited prior art.

The claimed piston pump is additionally described as having high volumetric efficiency and low leakage (claim 9), and the claimed fuel system is described as having a control accuracy of  $\pm 3\%$  over a 30 to 1 flow range (claim 12). Such material however merely constitutes desired results, and there is no recited structure that would render the claimed pump and/or system any more capable of such results than the prior art.

Claim 3 is rejected under 35 USC 103(a) as being unpatentable over Nelson in view of either Linebrink et al or Jansen as discussed above and with further comment.

In addition to the features pointed out above, Nelson's motor 12 is a brushless DC motor (col. 2, line 34), and it drives both a boost pump, 14, and a positive displacement metering pump, 16, as specified in claim 3.


### ***Allowable Subject Matter***

Claims 4-8 contain allowable subject matter but are objected to as depending from rejected parent claims. If rewritten in independent form, these claims will be allowed.

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Art Unit: 3746

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L. J. Casaregola  
571-272-4826 (M-F; 7:30-4:00)  
703-872-9306 FAX  
June 13, 2005

  
LOUIS J. CASAREGOLA  
PRIMARY EXAMINER

If repeated attempts to reach the examiner by telephone are unsuccessful, the art unit supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Information regarding the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR, and status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).